

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Canceled)

2. (Currently Amended) A ground contact load control apparatus for a vehicle comprising:

front and rear, left and right load bearing means for supporting the ground contact load of front and rear, left and right wheels, respectively;

a load changing means which operates to change the load supported by each of the load bearing means;

a vehicle state sensing means which senses the state of the vehicle; and

a control means which controls the operation of the load changing means in accordance with a signal from the vehicle state sensing means, wherein the load changing means increases or decreases the ground contact load of any pair of diagonally opposed wheels and the ground contact load of the other pair of diagonally opposed wheels in opposite directions from each other and increases or decreases the ground contact load of diagonally opposed wheels in the same direction as the load changing
~~A ground contact load control apparatus for a vehicle as set forth in claim 1, characterized in that~~means, wherein

the front and rear, left and right load bearing means which support the ground contact loads of the front and rear, left and right wheels comprise front and rear, left and right suspension hydraulic cylinders each having a port and mounted on a corresponding one of the front and rear, left and right wheels, and the load changing means which ~~can operate~~operates to change the ground contact load which is supported by each of the suspension hydraulic cylinders comprises ground contact load control hydraulic cylinders which receive the hydraulic pressure from each of the suspension hydraulic cylinders and operate based on the

pressure difference, and an actuator which imparts an operating force to the ground contact load control hydraulic cylinders.

3. (Currently Amended) A ground contact load control apparatus for a vehicle as set forth in claim 2, ~~characterized in that~~further comprising a pitching control hydraulic cylinder which controls pitching of the vehicle body, a rolling control hydraulic cylinder which controls rolling of the vehicle body, and a heave control hydraulic cylinder which controls bouncing of the vehicle ~~body are~~body, provided in a hydraulic circuit including each of the suspension hydraulic cylinders and the ground contact load control hydraulic cylinders.

4. (Currently Amended) A ground contact load control apparatus for a vehicle as set forth in claim 2, ~~characterized in that~~further comprising an accumulator and a damping valve ~~are~~ provided for each suspension hydraulic cylinder.

5. (Currently Amended) A ground contact load control apparatus for a vehicle as set forth in claim 2, ~~characterized in that~~further comprising a damping means and an elastic means ~~are~~ provided between the ground contact load control hydraulic cylinders and the actuator.

6. (Currently Amended) A ground contact load control apparatus for a vehicle as set forth in claim 2, ~~characterized in that~~further comprising a releasing means ~~is provided~~ which ~~can permit~~permits the ground contact load control hydraulic cylinders to freely move.

7. (Currently Amended) A ground contact load control apparatus for a vehicle as set forth in claim 2, ~~characterized in that~~further comprising a securing means ~~is provided~~ which ~~can disable~~disables the operation of the ground contact load control hydraulic cylinders.

8. (Currently Amended) A ground contact load control apparatus for a vehicle as set forth in ~~claim 1, characterized in that~~claim 2, wherein the vehicle state sensing means

comprises a tire pressure sensing means which senses the tire pressure of each of the front and rear, left and right wheels.

9. (Currently Amended) A ground contact load control apparatus for a vehicle as set forth in ~~claim 1, characterized in that~~claim 2, wherein the control means comprises an operating amount determining means which determines the operating amount of the load changing means in accordance with a signal from the vehicle state sensing means.

10. (Currently Amended) A ground contact load control apparatus for a vehicle as set forth in ~~claim 1, characterized in that~~claim 2, wherein the control means comprises an operating speed determining means which determines the operating speed of the load changing means based on a signal from the vehicle state sensing means.

11. (Currently Amended) A ground contact load control apparatus for a vehicle as set forth in claim 10, ~~characterized in that~~wherein the vehicle state sensing means comprises a vehicle speed sensing means which senses the vehicle speed, and the operating speed determined by the operating speed determining means decreases as the vehicle speed sensed by the vehicle speed sensing means increases.

12. (Currently Amended) A ground contact load control apparatus for a vehicle as set forth in claim 10, ~~characterized in that~~wherein the vehicle state sensing means comprises a gear ratio obtaining means which obtains the gear ratio of a variable gear ratio steering mechanism, and the operating speed determined by the operating speed determining means decreases as the gear ratio obtained by the gear ratio obtaining means increases.

13. (Currently Amended) A ground contact load control apparatus for a vehicle as set forth in ~~claim 1, characterized in that~~claim 2, wherein the control means comprises an allowing means which allows operating control by the load changing means when the vehicle speed is higher than a prescribed vehicle speed.

14. (Currently Amended) A ground contact load control apparatus for a vehicle as set forth in claim 2, ~~characterized in that~~wherein the control means comprises an initializing means which, during travel straight ahead, initializes sensors which sense the operating state of the actuators.

15. (Currently Amended) A ground contact load control apparatus for a vehicle comprising:

front and rear, left and right load bearing means for supporting the ground contact load of front and rear, left and right wheels, respectively;

a load changing means which operates to change the load supported by each of the load bearing means;

a vehicle state sensing means which senses the state of the vehicle; and

a control means which controls the operation of the load changing means in accordance with a signal from the vehicle state sensing means, wherein the load changing means increases or decreases the ground contact load of any pair of diagonally opposed wheels and the ground contact load of the other pair of diagonally opposed wheels in opposite directions from each other and increases or decreases the ground contact load of diagonally opposed wheels in the same direction as the load changing ~~A ground contact load control apparatus for a vehicle as set forth in claim 1, characterized in that~~means, wherein

the front and rear, left and right load bearing means which support the ground contact loads of the front and rear, left and right wheels comprise front and rear, left and right suspension hydraulic cylinders each having a single port and mounted on a corresponding one of the front and rear, left and right wheels, and the load changing means which ~~can operate~~operates to change the ground contact load supported by the suspension hydraulic cylinders comprises a first ground contact load control hydraulic cylinder which receives the hydraulic pressure from each of the suspension hydraulic cylinders mounted on the left and

right front wheels and is operated by the pressure difference, another ground contact load control hydraulic cylinder which receives the hydraulic pressure from each of the suspension hydraulic cylinders mounted on the left and right rear wheels and is operated by the pressure difference, an axial force ratio varying mechanism which ~~can vary~~varies the ratio of the axial force acting on each piston rod of the ground contact load control hydraulic cylinders by changing the position of the support point of an arm connecting both piston rods, and an actuator which ~~can change~~changes the position of the support point of the arm based on a signal from the vehicle state sensing means.

16. (Currently Amended) A ground contact load control apparatus for a vehicle as set forth in ~~claim 1, characterized in that~~claim 2, further comprising a road surface ~~#coefficient of friction~~ estimating means ~~is provided~~ which estimates the coefficient of friction of the road surface contacted by the left and right wheels at the time of braking, and a correcting means ~~is provided~~ which controls the operation of the load changing means based on the coefficient of friction of each road surface obtained by the road surface ~~#coefficient of friction~~ estimating means and which increases the ground contact load of the front wheel on the high ~~#coefficient of friction~~ side and of the rear wheel on the low ~~#coefficient of friction~~ side and decreases the ground contact load of the front wheel on the low ~~#coefficient of friction~~ side and of the rear wheel on the high ~~#coefficient of friction~~ side.

17. (Currently Amended) A ground contact load control apparatus for a vehicle as set forth in ~~claim 1, characterized in that~~claim 2, wherein the vehicle state sensing means comprises a vehicle speed sensing means which senses the vehicle speed and a steering angle sensor which senses the steering angle and a yaw rate sensor which senses the yaw rate, and the control means comprises a yaw rate estimating means which estimates a target yaw rate based on the vehicle speed sensed by the vehicle speed sensing means and the steering angle sensed by the steering angle sensor, a yaw rate comparing means which compares the target

yaw rate estimated by the yaw rate estimating means and the actual yaw rate sensed by the yaw rate sensor, and an operation correction amount determining means which determines an operation correction amount of the load changing means based on the difference between the target yaw rate and the actual yaw rate.